

General Physics

EXPERIMENTS WITH LIGHT MIGRATION IN MILK*

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We have explored experimentally and theoretically the propagation of a light pulse in a heterogeneous medium. From the theoretical point of view the process can be modeled by assuming that the laser photons perform random walk type motion. We have developed a Monte-Carlo algorithm [1] to simulate a laser pulse in a time-dependent turbid medium such as milk. The computer simulations are designed to get a better understanding of how spatial in-homogeneities that are embedded inside the milk modify the propagation dynamics and how they can be detected. I will also describe our first experiments to measure the scattering coefficient of milk for various concentrations by measuring the scattered light intensity as a function of the source-detector spacing.

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[1] M.S. Bell, A.F. Lewis, R.E. Wagner, Q. Su and R. Grobe, **Laser Phys.** 13, pp. 207-212 (2003).